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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/885,069	06/21/2001	Yuji Isoda	Q64937	5003

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EXAMINER

HO, ALLEN C

ART UNIT

PAPER NUMBER

2882

DATE MAILED: 05/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/885,069

Applicant(s)

ISODA ET AL.

Examiner

Allen C. Ho

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 April 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 60,66,126 and 132-152 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 60,66,126,132 and 149-152 is/are rejected.
- 7) ☒ Claim(s) 133-148 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 June 2001 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_. 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 60, 126, 149, and 151 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saotome (U. S. Patent No. 5,038,037) in view of Nakamura *et al.* (U. S. Patent No. 5,427,858) and Struye *et al.* (U. S. Patent No. 5,371,377).

Saotome disclosed a radiation image read-out method and apparatus, comprising: (i) a line light source (621) for linearly irradiating stimulating rays onto an area of a front surface (402B) of a stimuable phosphor sheet (402B, 405, 402B'), on which a radiation image has been stored, the stimulating rays causing the stimuable phosphor sheet to emit light in proportion to an amount of energy stored thereon during its exposure to radiation; (ii) a line sensor (623) for receiving light, which is emitted from the linear area of the front surface (402B) of the stimuable phosphor sheet exposed to the linear stimulating rays or from a linear area of a back surface (402B') of the stimuable phosphor sheet corresponding to the linear area of the front surface of the stimuable phosphor sheet, and performing photoelectric conversion of the received light, the line sensor comprising a plurality of photoelectric conversion devices (623A, 623B) arrayed along a length direction of the linear area of the stimuable phosphor sheet; (iii) scanning means (440) for moving the stimuable phosphor sheet with respect to the line light source and the line

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sensor and in a direction different from a length direction of the linear area of the stimuable phosphor sheet; and (iv) reading means (626) for successively reading outputs of the photoelectric conversion devices of the line sensor in accordance with the movement. The stimuable phosphor sheet is permeable to the emitted light and the emitted light is received from the back surface of the stimuable phosphor sheet.

However, Saotome did not teach that the line light source is constituted of an organic EL device.

Nakamura *et al.* disclosed an organic EL light source; the wavelength of the light source can be customized by changing the kinds of fluorescent organic solids of which the light-emitting layer is formed (column 1, lines 40-43). Struye *et al.* taught that the emission intensity of the phosphor depends on the wavelength of the excitation light.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to employ an organic EL light source as a line light source in a radiation image read-out apparatus. Since the stimulated emission of the phosphor depends on the wavelength of the stimulating light, a person would be motivated to employ an organic EL light source whose wavelength can be customized to induce optimal emission yield in the phosphor in order to enhance the signal to noise ratio in the image.

3. Claims 66, 132, 150, and 152 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saotome (U. S. Patent No. 5,038,037) in view of Nakamura *et al.* (U. S. Patent No. 5,427,858), Gilblom *et al.* (U. S. Patent No. 5,747,825), and Struye *et al.* (U. S. Patent No. 5,371,377).

Saotome disclosed a radiation image read-out method and apparatus, comprising: (i) a line light source (621) for linearly irradiating stimulating rays onto an area of a front surface (402B) of a stimuable phosphor sheet (402B, 405, 402B'), on which a radiation image has been stored, the stimulating rays causing the stimuable phosphor sheet to emit light in proportion to an amount of energy stored thereon during its exposure to radiation; (ii) a line sensor (623) for receiving light, which is emitted from the linear area of the front surface (402B) of the stimuable phosphor sheet exposed to the linear stimulating rays or from a linear area of a back surface (402B') of the stimuable phosphor sheet corresponding to the linear area of the front surface of the stimuable phosphor sheet, and performing photoelectric conversion of the received light, the line sensor comprising a plurality of photoelectric conversion devices (623A, 623B) arrayed along a length direction of the linear area of the stimuable phosphor sheet; and (iii) reading means (626) for successively reading outputs of the photoelectric conversion devices of the line sensor in accordance with the movement. The stimuable phosphor sheet is permeable to the emitted light and the emitted light is received from the back surface of the stimuable phosphor sheet.

However, Saotome did not teach that: (1) the light source is a surface light source constituted of an organic EL device; and (2) the sensor is an area sensor.

Nakamura *et al.* disclosed an organic EL light source; the wavelength of the light source can be customized by changing the kinds of fluorescent organic solids of which the light-emitting layer is formed (column 1, lines 40-43). Furthermore, organic EL devices could be used as a surface light source (column 3, lines 22-26). Gilblom *et al.* disclosed an image read-out

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apparatus comprising a CCD area sensor. Struye *et al.* taught that the emission intensity of the phosphor depends on the wavelength of the excitation light.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to employ an organic EL light source as a line light source in a radiation image read-out apparatus. Since the stimulated emission of the phosphor depends on the wavelength of the stimulating light, a person would be motivated to employ an organic EL light source whose wavelength can be customized to induce optimal emission yield in the phosphor in order to enhance the signal to noise ratio in the image. Furthermore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to employ a surface light source with an area sensor for reading the image data, since a person would be motivated to reduce the time it takes to read in the data.

#### ***Allowable Subject Matter***

4. Claims 133-148 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is a statement of reasons for the indication of allowable subject matter:

The allowable subject matter in claims 133-144 refers to monitoring an intensity of the stimulating rays emitted from the organic EL device.

The allowable subject matter in claims 145-148 refers to optical path overlap of the emitted light and light from the light source.

***Response to Arguments***

6. Applicant's arguments with respect to claims 60, 66, 126, and 132 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- (1) Yasuda *et al.* (U. S. Patent No. 6,313,477 B1) describe a method and an apparatus for reading radiation images.
- (2) Fuchs *et al.* (U. S. Patent No. 6,310,357 B1) describe a device for reading out a storage luminophore plate.
- (3) Kawai (U. S. Patent No. 6,239,448 B1) describes a double-sided radiation image read-out method and apparatus.
- (4) Fukui *et al.* (U. S. Patent No. 6,075,250) describe a stimuable phosphor sheet for a double-sided image read-out apparatus.
- (5) Arakawa (U. S. Patent No. 5,661,306) describes a stimuable phosphor sheet for a double-sided image read-out apparatus.
- (6) Kohda (U. S. Patent No. 5,591,982) describes a stimuable phosphor sheet for a double-sided image read-out apparatus.
- (7) Hosoi (U. S. Patent No. 5,483,081) describes method for detecting light emitted by two surfaces of a stimuable phosphor sheet.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen C. Ho whose telephone number is (703) 308-6189. The examiner can normally be reached on Monday - Friday from 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached at (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0530.

Allen C. Ho  
Examiner  
Art Unit 2882

ACH  
April 29, 2002

  
ROBERT H. KIM  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800